

## CONTENTS

### Volume 37 Number 1

P. A. W. van Hees, D. L. Jones, R. Finlay, D. L. Godbold and U. S. Lundström	1	The carbon we do not see—the impact of low molecular weight compounds on carbon dynamics and respiration in forest soils: a review
M. I. Makarov, L. Haumaier, W. Zech, O. E. Marfenina and L. V. Lysak	15	Can $^{31}\text{P}$ NMR spectroscopy be used to indicate the origins of soil organic phosphates?
L. A. Uffindell, P. Ineson and A. A. Meharg	27	Enchytraeid worms retard polycyclic aromatic hydrocarbon degradation in a coniferous forest soil
M.-C. Marx, E. Kandeler, M. Wood, N. Wermbter and S. C. Jarvis	35	Exploring the enzymatic landscape: distribution and kinetics of hydrolytic enzymes in soil particle-size fractions
P. A. Torres, A. B. Abril and E. H. Bucher	49	Microbial succession in litter decomposition in the semi-arid Chaco woodland
S. De Gryze, J. Six, C. Brits and R. Merckx	55	A quantification of short-term macroaggregate dynamics: influences of wheat residue input and texture
M. Aubert, F. Bureau and M. Vincelas-Akpa	67	Sources of spatial and temporal variability of inorganic nitrogen in pure and mixed deciduous temperate forests
V. R. Smith	81	Moisture, carbon and inorganic nutrient controls of soil respiration at a sub-Antarctic island
J. A. E. Molina, C. E. Clapp, R. R. Allmaras and M. F. Layese	93	Simulation of nitrogen rhizodeposition and assimilation back into corn ( <i>Zea mays</i> L.) roots
J. D. Driver, W. E. Holben and M. C. Rillig	101	Characterization of glomalin as a hyphal wall component of arbuscular mycorrhizal fungi
X. Li and A. Brune	107	Digestion of microbial biomass, structural polysaccharides, and protein by the humivorous larva of <i>Pachnoda ephippiata</i> (Coleoptera: Scarabaeidae)
J. F. Parr and L. A. Sullivan	117	Soil carbon sequestration in phytoliths
M. Alvarez, R. Godoy, W. Heyser and S. Härtel	125	Anatomical-physiological determination of surface bound phosphatase activity in ectomycorrhizae of <i>Nothofagus obliqua</i>
G. Renella, M. Mench, L. Landi and P. Nannipieri	133	Microbial activity and hydrolase synthesis in long-term Cd-contaminated soils
J. K. Yang, F. L. Xie, J. Zou, Q. Zhou and J. C. Zhou	141	Polyphasic characteristics of bradyrhizobia isolated from nodules of peanut ( <i>Arachis hypogaea</i> ) in China
A. Melnitchouck, P. Leinweber, K.-U. Eckhardt and R. Beese	155	Qualitative differences between day- and night-time rhizodeposition in maize ( <i>Zea mays</i> L.) as investigated by pyrolysis-field ionization mass spectrometry
P. Pypers, S. Verstraete, C. P. Thi and R. Merckx	163	Changes in mineral nitrogen, phosphorus availability and salt-extractable aluminium following the application of green manure residues in two weathered soils of South Vietnam
M. Goberna, H. Insam, J. A. Pascual and J. Sánchez	173	Storage effects on the community level physiological profiles of Mediterranean forest soils
D. L. Jones, D. Shannon, T. Junvee-Fortune and J. F. Farrar	179	Plant capture of free amino acids is maximized under high soil amino acid concentrations
A. Herrmann, E. Witter and T. Kätterer	183	A method to assess whether 'preferential use' occurs after $^{15}\text{N}$ ammonium addition; implication for the $^{15}\text{N}$ isotope dilution technique

### Volume 37 Number 2

D. Seghers, S. D. Siciliano, E. M. Top and W. Verstraete	187	Combined effect of fertilizer and herbicide applications on the abundance, community structure and performance of the soil methanotrophic community
X. Yu, J. Cheng and M. H. Wong	195	Earthworm-mycorrhiza interaction on Cd uptake and growth of ryegrass
L. Bjørnlund and S. Christensen	203	How does litter quality and site heterogeneity interact on decomposer food webs of a semi-natural forest?
P. H. Templer, P. M. Groffman, A. S. Flecker and A. G. Power	215	Land use change and soil nutrient transformations in the Los Haitises region of the Dominican Republic
F. Caravaca, M. M. Alguacil, J. M. Barea and A. Roldán	227	Survival of inocula and native AM fungi species associated with shrubs in a degraded Mediterranean ecosystem

M. de A. L. Junior, A. S. T. Lima, J. R. F. Arruda and D. L. Smith	235	Effect of root temperature on nodule development of bean, lentil and pea
A. A. Belimov, N. Hontzeas, V. I. Safronova, S. V. Demchinskaya, G. Piluzza, S. Bullitta and B. R. Glick	241	Cadmium-tolerant plant growth-promoting bacteria associated with the roots of Indian mustard ( <i>Brassica juncea</i> L. Czern.)
H. Bossuyt, J. Six and P. F. Hendrix	251	Protection of soil carbon by microaggregates within earthworm casts
A. Sandnes, T. D. Eldhuset and G. Wollebæk	259	Organic acids in root exudates and soil solution of Norway spruce and silver birch
L. A. Bouwman, J. Bloem, P. F. A. M. Römkens and J. Japenga	271	EDGA amendment of slightly heavy metal loaded soil affects heavy metal solubility, crop growth and microbivorous nematodes but not bacteria and herbivorous nematodes
M. E. Probert, R. J. Delve, S. K. Kimani and J. P. Dimes	279	Modelling nitrogen mineralization from manures: representing quality aspects by varying C:N ratio of sub-pools
J. E. T. McLain and D. A. Martens	289	Nitrous oxide flux from soil amino acid mineralization
J. Debode, E. Clewes, G. D. Backer and M. Höfte	301	Lignin is involved in the reduction of <i>Verticillium dahliae</i> var. <i>longisporum</i> inoculum in soil by crop residue incorporation
X. R. Zhao, Q. Lin and P. C. Brookes	311	Does soil ergosterol concentration provide a reliable estimate of soil fungal biomass?
M. D. Madritch and M. D. Hunter	319	Phenotypic variation in oak litter influences short- and long-term nutrient cycling through litter chemistry
M. Schädler and R. Brandl	329	Do invertebrate decomposers affect the disappearance rate of litter mixtures?
M. M. Mikha, C. W. Rice and G. A. Milliken	339	Carbon and nitrogen mineralization as affected by drying and wetting cycles
A. S. de Ridder-Duine, G. A. Kowalchuk, P. J. A. K. Gunnewiek, W. Smant, J. A. van Veen and W. de Boer	349	Rhizosphere bacterial community composition in natural stands of <i>Carex arenaria</i> (sand sedge) is determined by bulk soil community composition
B. M. Petersen, J. Berntsen, S. Hansen and L. S. Jensen	359	CN-SIM—a model for the turnover of soil organic matter. I. Long-term carbon and radiocarbon development
B. M. Petersen, L. S. Jensen, S. Hansen, A. Pedersen, T. M. Henriksen, P. Sørensen, I. Trinsoutrot-Gattin and J. Berntsen	375	CN-SIM: a model for the turnover of soil organic matter. II. Short-term carbon and nitrogen development

### Volume 37 Number 3

E. J. Gray and D. L. Smith	395	Intracellular and extracellular PGPR: commonalities and distinctions in the plant-bacterium signaling processes
D. L. Jones, J. R. Healey, V. B. Willett, J. F. Farrar and A. Hodge	413	Dissolved organic nitrogen uptake by plants—an important N uptake pathway?
H. Shindo and T. Nishio	425	Immobilization and remineralization of N following addition of wheat straw into soil: determination of gross N transformation rates by <sup>15</sup> N-ammonium isotope dilution technique
K. Ilmarinen, J. Mikola, M. Nieminen and M. Vestberg	433	Does plant growth phase determine the response of plants and soil organisms to defoliation?
U. Hamer and B. Marschner	445	Priming effects in different soil types induced by fructose, alanine, oxalic acid and catechol additions
J. Sardans and J. Peñuelas	455	Drought decreases soil enzyme activity in a Mediterranean <i>Quercus ilex</i> L. forest
J. W. van Groenigen, P. J. Kuikman, W. J. M. de Groot and G. L. Velthof	463	Nitrous oxide emission from urine-treated soil as influenced by urine composition and soil physical conditions
K. Spokas, D. Wang and R. Venterea	475	Greenhouse gas production and emission from a forest nursery soil following fumigation with chloropicrin and methyl isothiocyanate
S. Salmon, J.-J. Geoffroy and J.-F. Ponge	487	Earthworms and collembola relationships: effects of predatory centipedes and humus forms
K.-J. van Groenigen, A. Gorissen, J. Six, D. Harris, P. J. Kuikman, J. W. van Groenigen and C. van Kessel	497	Decomposition of <sup>14</sup> C-labeled roots in a pasture soil exposed to 10 years of elevated CO <sub>2</sub>

J. Wu and P. C. Brookes	507	The proportional mineralisation of microbial biomass and organic matter caused by air-drying and rewetting of a grassland soil
P. A. W. van Hees, D. L. Jones, L. Nyberg, S. J. M. Holmström, D. L. Godbold and U. S. Lundström	517	Modelling low molecular weight organic acid dynamics in forest soils
J. Bayala, A. Mando, Z. Teklehaimanot and S. J. Ouedraogo	533	Nutrient release from decomposing leaf mulches of <i>karité</i> ( <i>Vitelaria paradoxa</i> ) and <i>néré</i> ( <i>Parkia biglobosa</i> ) under semi-arid conditions in Burkina Faso, West Africa
D. G. Karpouzas, E. Karanasios, I. O. Giannakou, A. Georgiadou and U. Menkissoglu-Spiroudi	541	The effect of soil fumigants methyl bromide and metham sodium on the microbial degradation of the nematocide Cadusafos
X. Cheng and C. S. Bledsoe	551	Effects of annual grass senescence on $^{15}\text{NH}_4^+$ and $^{15}\text{N}$ -glycine uptake by blue oak ( <i>Quercus douglasii</i> ) seedlings and soil microorganisms in California oak woodland
W.-c. (Wim) Ma	561	Critical body residues (CBRs) for ecotoxicological soil quality assessment: copper in earthworms
J. Luxhøi, S. Recous, I. R. P. Fillery, D. V. Murphy and L. S. Jensen	569	Comparison of $^{15}\text{NH}_4^+$ pool dilution techniques to measure gross N fluxes in a coarse textured soil
K. Broos, H. Beyens and E. Smolders	573	Survival of rhizobia in soil is sensitive to elevated zinc in the absence of the host plant
M. K. Zdanowski, M. J. Zmuda and I. Zwolska	581	Bacterial role in the decomposition of marine-derived material (penguin guano) in the terrestrial maritime Antarctic
W. H. Ko, I. T. Wang and P. J. Ann	597	A simple method for detection of lipolytic microorganisms in soils
T. C. Balser, K. K. Treseder and M. Ekenler	601	Using lipid analysis and hyphal length to quantify AM and saprotrophic fungal abundance along a soil chronosequence
N. Millar and E. M. Baggs	605	Relationships between $\text{N}_2\text{O}$ emissions and water-soluble C and N contents of agroforestry residues after their addition to soil
B. J. Reid and R. Watson	609	Lead tolerance in <i>Aporrectodea rosea</i> earthworms from a clay pigeon shooting site

#### Volume 37 Number 4

S. Bittman, T. A. Forge and C. G. Kowalenko	613	Responses of the bacterial and fungal biomass in a grassland soil to multi-year applications of dairy manure slurry and fertilizer
L. V. Verchot and T. Borelli	625	Application of <i>para</i> -nitrophenol (pNP) enzyme assays in degraded tropical soils
G. Nziguheba, E. Smolders and R. Merckx	635	Sulphur immobilization and availability in soils assessed using isotope dilution
J. Lussenhop and H. BassiriRad	645	Collembola effects on plant mass and nitrogen acquisition by ash seedlings ( <i>Fraxinus pennsylvanica</i> )
L. P. Olander and P. M. Vitousek	651	Short-term controls over inorganic phosphorus during soil and ecosystem development
E. Hackl, M. Pfeffer, C. Donat, G. Bachmann and S. Zechmeister-Boltenstern	661	Composition of the microbial communities in the mineral soil under different types of natural forest
C. Parat, R. Chaussod, J. Lévêque and F. Andreux	673	Long-term effects of metal-containing farmyard manure and sewage sludge on soil organic matter in a fluvisol
E. Conde, M. Cardenas, A. Ponce-Mendoza, M. L. Luna-Guido, C. Cruz-Mondragón and L. Dendooven	681	The impacts of inorganic nitrogen application on mineralization of $^{14}\text{C}$ -labelled maize and glucose, and on priming effect in saline alkaline soil
D. Mohr, L. W. Cohnstaedt and W. Topp	693	Wild boar and red deer affect soil nutrients and soil biota in steep oak stands of the Eifel
H. Knicker, F. J. González-Vila, O. Polvillo, J. A. González and G. Almendros	701	Fire-induced transformation of C- and N- forms in different organic soil fractions from a Dystric Cambisol under a Mediterranean pine forest ( <i>Pinus pinaster</i> )
D. S. Reay, D. B. Nedwell, N. McNamara and P. Ineson	719	Effect of tree species on methane and ammonium oxidation capacity in forest soils
X. Ke, K. Winter and J. Filser	731	Effects of soil mesofauna and farming management on decomposition of clover litter: a microcosm experiment
R. Kettunen, S. Saarnio, P. Martikainen and J. Silvola	739	Elevated $\text{CO}_2$ concentration and nitrogen fertilisation effects on $\text{N}_2\text{O}$ and $\text{CH}_4$ fluxes and biomass production of <i>Phleum pratense</i> on farmed peat soil

E. A. Webster, C. Halpin, J. A. Chudek, E. L. Tilston and D. W. Hopkins	751	Decomposition in soil of soluble, insoluble and lignin-rich fractions of plant material from tobacco with genetic modifications to lignin biosynthesis
B. Vandecasteele, B. De Vos, B. Muys and F. M. G. Tack	761	Rates of forest floor decomposition and soil forming processes as indicators of forest ecosystem functioning on a polluted dredged sediment landfill
P. A. W. van Hees, D. L. Jones, G. Jentschke and D. L. Godbold	771	Organic acid concentrations in soil solution: effects of young coniferous trees and ectomycorrhizal fungi
A. Hernesmaa, K. Björklöf, O. Kiikkilä, H. Fritze, K. Hahtela and M. Romantschuk	777	Structure and function of microbial communities in the rhizosphere of Scots pine after tree-felling
C. M. Schwendener, J. Lehmann, P. B. de Camargo, R. C. C. Luizão and E. C. M. Fernandes	787	Nitrogen transfer between high- and low-quality leaves on a nutrient-poor Oxisol determined by $^{15}\text{N}$ enrichment
M.-M. Couéteaux, L. Sarmiento, D. Hervé and D. Acevedo	795	Determination of water-soluble and total extractable polyphenolics in biomass, necromass and decomposing plant material using near-infrared reflectance spectroscopy (NIRS)
J.-P. Paul and B. L. Williams	801	Contribution of $\alpha$ -amino N to extractable organic nitrogen (DON) in three soil types from the Scottish uplands
V. Nuutinen and K. R. Butt	805	Homing ability widens the sphere of influence of the earthworm <i>Lumbricus terrestris</i> L.

### Volume 37 Number 5

R. G. Burns	809	Soil Biology & Biochemistry Citation Classics III
M. Clarholm	811	Soil protozoa: an under-researched microbial group gaining momentum
E. Personeni, A. Lüscher and P. Loiseau	819	Rhizosphere activity, grass species and N availability effects on the soil C and N cycles
K. Schmidtke	829	A model to predict the accuracy of measurements of legume N rhizodeposition using a split-root technique
C. A. Kinney, K. W. Mandernack and A. R. Mosier	837	Laboratory investigations into the effects of the pesticides mancozeb, chlorothalonil, and prosulfuron on nitrous oxide and nitric oxide production in fertilized soil
M. A. Fomina, I. J. Alexander, J. V. Colpaert and G. M. Gadd	851	Solubilization of toxic metal minerals and metal tolerance of mycorrhizal fungi
S. J. Kemmitt, D. Wright and D. L. Jones	867	Soil acidification used as a management strategy to reduce nitrate losses from agricultural land
F. Gil-Sotres, C. Trasar-Cepeda, M. C. Leirós and S. Seoane	877	Different approaches to evaluating soil quality using biochemical properties
E. Velasquez, P. Lavelle, E. Barrios, R. Joffre and F. Reversat	889	Evaluating soil quality in tropical agroecosystems of Colombia using NIRS
J. Mikola, K. Ilmarinen, M. Nieminen and M. Vestberg	899	Long-term soil feedback on plant N allocation in defoliated grassland miniecosystems
R. G. Qualls and S. D. Bridgman	905	Mineralization rate of $^{14}\text{C}$ -labelled dissolved organic matter from leaf litter in soils of a weathering chronosequence
M. I. Zorn, C. A. M. Van Gestel and H. Eijsackers	917	The effect of two endogeic earthworm species on zinc distribution and availability in artificial soil columns
T. S. Svendsen, P. E. Hansen, C. Sommer, T. Martinussen, J. Grønvold and P. Holter	927	Life history characteristics of <i>Lumbricus terrestris</i> and effects of the veterinary antiparasitic compounds ivermectin and fenbendazole
S. D. Allison and P. M. Vitousek	937	Responses of extracellular enzymes to simple and complex nutrient inputs
L. Ruess, A. Tiunov, D. Haubert, H. H. Richnow, M. M. Häggblom and S. Scheu	945	Carbon stable isotope fractionation and trophic transfer of fatty acids in fungal based soil food chains
W. G. D. Fernando, R. Ramarathnam, A. S. Krishnamoorthy and S. C. Savchuk	955	Identification and use of potential bacterial organic antifungal volatiles in biocontrol
T. Wu, Z. Kabir and R. T. Koide	965	A possible role for saprotrophic microfungi in the N nutrition of ectomycorrhizal <i>Pinus resinosa</i>

T. S. George, A. E. Richardson and R. J. Simpson	977	Behaviour of plant-derived extracellular phytase upon addition to soil
J. Dyckmans, C. M. Scrimgeour and O. Schmidt	989	A simple and rapid method for labelling earthworms with $^{15}\text{N}$ and $^{13}\text{C}$
L. J. Shaw and R. G. Burns	995	Rhizodeposits of <i>Trifolium pratense</i> and <i>Lolium perenne</i> : their comparative effects on 2,4-D mineralization in two contrasting soils
J. Luxhøi, B. Mary and L. S. Jensen	1003	Comments to 'A $^{15}\text{N}$ tracing model to analyse N transformations in old grassland soil'
C. Müller, R. J. Stevens and R. J. Laughlin	1007	Response to comments by Luxhøi et al. to the paper "A $^{15}\text{N}$ tracing model to analyse N transformations..."
K. Sakamoto, T. Iijima and R. Higuchi	1009	Erratum to "Use of specific phospholipid fatty acids for identifying and quantifying the external hyphae of the arbuscular mycorrhizal fungus <i>Gigaspora rosea</i> " [Soil Biology & Biochemistry 36 (2004) 1827–1834]

### Volume 37 Number 6

B. A. Jaffee and D. R. Strong	1011	Strong bottom-up and weak top-down effects in soil: nematode-parasitized insects and nematode-trapping fungi
C. Lors, B. Lagacherie, C. Chabanet and G. Soulas	1023	DNOC, a model pollutant, adversely affects the potential of soil microbial communities to mineralise the herbicide 2,4-D: an investigation using micro-sampling procedures
G. Jandl, P. Leinweber, H.-R. Schulten and K. Ekschmitt	1033	Contribution of primary organic matter to the fatty acid pool in agricultural soils
P. Mora, E. Miambi, J. J. Jiménez, T. Decaëns and C. Rouland	1043	Functional complement of biogenic structures produced by earthworms, termites and ants in the neotropical savannas
B. Ravit, J. G. Ehrenfeld and M. M. Häggblom	1049	Salt marsh rhizosphere affects microbial biotransformation of the widespread halogenated contaminant tetrabromobisphenol-A (TBBPA)
K. von Arnold, M. Nilsson, B. Hånell, P. Weslien and L. Klemetsson	1059	Fluxes of $\text{CO}_2$ , $\text{CH}_4$ and $\text{N}_2\text{O}$ from drained organic soils in deciduous forests
S. Flores, D. Saxena and G. Stotzky	1073	Transgenic <i>Bt</i> plants decompose less in soil than non- <i>Bt</i> plants
A. Fioretto, C. Di Nardo, S. Papa and A. Fuggi	1083	Lignin and cellulose degradation and nitrogen dynamics during decomposition of three leaf litter species in a Mediterranean ecosystem
J.-P. Rossi and E. Blanchart	1093	Seasonal and land-use induced variations of soil macrofauna composition in the Western Ghats, southern India
M. Francesca Cotrufo, B. Drake and J. R. Ehleringer	1105	Palatability trials on hardwood leaf litter grown under elevated $\text{CO}_2$ : a stable carbon isotope study
H. Okada, H. Harada and I. Kadota	1113	Fungal-feeding habits of six nematode isolates in the genus <i>Filenchus</i>
C. E. Pankhurst, G. R. Stirling, R. C. Magarey, B. L. Blair, J. A. Holt, M. J. Bell and A. L. Garside	1121	Quantification of the effects of rotation breaks on soil biological properties and their impact on yield decline in sugarcane
J. A. Carrasco, P. Armario, E. Pajuelo, A. Burgos, M. A. Caviedes, R. López, M. A. Chamber and A. J. Palomares	1131	Isolation and characterisation of symbiotically effective <i>Rhizobium</i> resistant to arsenic and heavy metals after the toxic spill at the Aznalcóllar pyrite mine
D. W. Hopkins, S. Marinari, E. L. Tilston and C. Halpin	1141	<i>Lumbricus terrestris</i> counteract the effects of modified lignin biosynthesis on the decomposition of tobacco plant residues
S. Georgieva, S. Christensen, H. Petersen, P. Gjelstrup and K. Thorup-Kristensen	1145	Early decomposer assemblages of soil organisms in litterbags with vetch and rye roots
S. J. Grayston and C. E. Prescott	1157	Microbial communities in forest floors under four tree species in coastal British Columbia
K. Musiyiwa, S. Mpeperekhi and K. E. Giller	1169	Symbiotic effectiveness and host ranges of indigenous rhizobia nodulating promiscuous soyabean varieties in Zimbabwean soils
P. W. Ramsey, M. C. Rillig, K. P. Feris, J. N. Moore and J. E. Gannon	1177	Mine waste contamination limits soil respiration rates: a case study using quantile regression
Y. Liang, J. Si, M. Nikolic, Y. Peng, W. Chen and Y. Jiang	1185	Organic manure stimulates biological activity and barley growth in soil subject to secondary salinization



J. K. Keller, S. D. Bridgham,  
C. T. Chapin and C. M. Iversen  
L. Yang and Z. Cai

A. P. Moon and T. J. Smith

- 1197 Limited effects of six years of fertilization on carbon mineralization dynamics in a Minnesota fen  
1205 The effect of growing soybean (*Glycine max.* L.) on N<sub>2</sub>O emission from soil  
1211 Organophosphate inhibition of an arylesterase from *Lumbricus terrestris* and reversal by pralidoxime

### Volume 37 Number 7

M.F. Cohen, H. Yamasaki and  
M. Mazzola

E. Monfort, L. V. Lopez-Llorca,  
H.-B. Jansson, J. Salinas, J. O. Park  
and K. Sivasithamparan

E. Ritter

R. G. Joergensen and M. Potthoff

M. Potthoff, J. Dyckmans, H. Flessa,  
A. Muhs, F. Beese and  
R. G. Joergensen

D. L. Jones, S. J. Kemmitt, D. Wright,  
S. P. Cuttle, R. Bol and A. C. Edwards

N. Fenner, C. Freeman and  
B. Reynolds

W. M. Williamson, D. A. Wardle and  
G. W. Yeates

S. A. E. Kools, M. van Rooy, C. A.  
M. van Gestel and N. M. van Straalen

A. Smolander, J. Lopenen,  
K. Suominen and V. Kitunen

K. Kalbitz, D. Schwesig,  
J. Rethemeyer and E. Matzner

K. Khalil, P. Renault and B. Mary

D. Rotenberg, L. Cooperband and  
A. Stone

C. White, J. C. Tardif, A. Adkins and  
R. Staniforth

K. Lorenz and E. Kandeler

Z. Xie, G. Cadisch, G. Edwards,  
E. M. Baggs and H. Blum

T. C. Flavel, D. V. Murphy, B. M. Lalor  
and I. R. P. Fillery

P.-Y. Cheung and B. K. Kinkle

U. Ilstedt and S. Singh

- 1215 *Brassica napus* seed meal soil amendment modifies microbial community structure, nitric oxide production and incidence of *Rhizoctonia* root rot  
1229 Colonisation of seminal roots of wheat and barley by egg-parasitic nematophagous fungi and their effects on *Gaeumannomyces graminis* var. *tritici* and development of root-rot  
1237 Litter decomposition and nitrogen mineralization in newly formed gaps in a Danish beech (*Fagus sylvatica*) forest  
1249 Microbial reaction in activity, biomass, and community structure after long-term continuous mixing of a grassland soil  
1259 Dynamics of maize (*Zea mays* L.) leaf straw mineralization as affected by the presence of soil and the availability of nitrogen  
1267 Rapid intrinsic rates of amino acid biodegradation in soils are unaffected by agricultural management strategy  
1277 Hydrological effects on the diversity of phenolic degrading bacteria in a peatland: implications for carbon cycling  
1289 Changes in soil microbial and nematode communities during ecosystem decline across a long-term chronosequence  
1303 Glyphosate degradation as a soil health indicator for heavy metal polluted soils  
1309 Organic matter characteristics and C and N transformations in the humus layer under two tree species, *Betula pendula* and *Picea abies*  
1319 Stabilization of dissolved organic matter by sorption to the mineral soil  
1333 Effects of transient anaerobic conditions in the presence of acetylene on subsequent aerobic respiration and N<sub>2</sub>O emission by soil aggregates  
1343 Dynamic relationships between soil properties and foliar disease as affected by annual additions of organic amendment to a sandy-soil vegetable production system  
1359 Functional diversity of microbial communities in the mixed boreal plain forest of central Canada  
1373 Biochemical characterization of urban soil profiles from Stuttgart, Germany  
1387 Carbon dynamics in a temperate grassland soil after 9 years exposure to elevated CO<sub>2</sub> (Swiss FACE)  
1397 Gross N mineralization rates after application of composted grape marc to soil  
1401 Effects of nutrients and surfactants on pyrene mineralization and *Mycobacterium* spp. populations in contaminated soil  
1407 Nitrogen and phosphorus limitations of microbial respiration in a tropical phosphorus-fixing Acrisol (Ultisol) compared with organic compost

### Volume 37 Number 8

- J. P. Schimel and C. Mikan 1411 Changing microbial substrate use in Arctic tundra soils through a freeze-thaw cycle
- R. E. J. Boerner, J. A. Brinkman and A. Smith 1419 Seasonal variations in enzyme activity and organic carbon in soil of a burned and unburned hardwood forest
- S. H. DeGrood, V. P. Claassen and K. M. Scow 1427 Microbial community composition on native and drastically disturbed serpentine soils
- C. Morgante, J. Angelini, S. Castro and A. Fabra 1436 Role of rhizobial exopolysaccharides in crack entry/intercellular infection of peanut
- L. Melling, R. Hatano and K. J. Goh 1445 Methane fluxes from three ecosystems in tropical peatland of Sarawak, Malaysia
- Q. H. Zhou, Z. B. Wu, S. P. Cheng, F. He and G. P. Fu 1454 Enzymatic activities in constructed wetlands and di-*n*-butyl phthalate (DBP) biodegradation
- R. Duponnois, A. Colombet, V. Hien and J. Thioulouse 1460 The mycorrhizal fungus *Glomus intraradices* and rock phosphate amendment influence plant growth and microbial activity in the rhizosphere of *Acacia holosericea*
- M. N. Weintraub and J. P. Schimel 1469 Seasonal protein dynamics in Alaskan arctic tundra soils
- X. Li and A. Brune 1476 Selective digestion of the peptide and polysaccharide components of synthetic humic acids by the humivorous larva of *Pachnoda ephippiata* (Coleoptera: Scarabaeidae)
- J. Sawai, K. Himizu and O. Yamamoto 1484 Kinetics of bacterial death by heated dolomite powder slurry
- C. H. Chaîneau, G. Rougeux, C. Yéprémian and J. Oudot 1490 Effects of nutrient concentration on the biodegradation of crude oil and associated microbial populations in the soil
- G. Renella, M. Mench, A. Gelsomino, L. Landi and P. Nannipieri 1498 Functional activity and microbial community structure in soils amended with bimetallic sludges
- M. I. Khalil, M. B. Hossain and U. Schmidhalter 1507 Carbon and nitrogen mineralization in different upland soils of the subtropics treated with organic materials
- N. Silvan, E.-S. Tuittila, V. Kitunen, H. Vasander and J. Laine 1519 Nitrate uptake by *Eriophorum vaginatum* controls N<sub>2</sub>O production in a restored peatland
- M. Drouillon and R. Merckx 1527 Performance of *para*-nitrophenyl phosphate and 4-methylumbelliferyl phosphate as substrate analogues for phosphomonoesterase in soils with different organic matter content
- S. Toyoda, H. Mutoke, H. Yamagishi, N. Yoshida and Y. Tanji 1535 Fractionation of N<sub>2</sub>O isotopomers during production by denitrifier
- E. A. H. Smithwick, M. G. Turner, K. L. Metzger and T. C. Balser 1546 Variation in NH<sub>4</sub><sup>+</sup> mineralization and microbial communities with stand age in lodgepole pine (*Pinus contorta*) forests, Yellowstone National Park (USA)
- M. Christou, E. J. Avramides, J. P. Roberts and D. L. Jones 1560 Dissolved organic nitrogen in contrasting agricultural ecosystems
- T. Becquer, J. Dai, C. Quantin and P. Lavelle 1564 Sources of bioavailable trace metals for earthworms from a Zn-, Pb- and Cd-contaminated soil
- K. Yano and M. Takaki 1569 Mycorrhizal alleviation of acid soil stress in the sweet potato (*Ipomoea batatas*)
- B. T. Nguyen and P. Marschner 1573 Effect of drying and rewetting on phosphorus transformations in red brown soils with different soil organic matter content

### Volume 37 Number 9

- P. Lentzsch, R. Wieland and S. Wirth 1577 Application of multiple regression and neural network approaches for landscape-scale assessment of soil microbial biomass
- A. M. Laverman, M. Braster, W. F. M. Röling and H. W. van Verveveld 1581 Bacterial community structure and metabolic profiles in a forest soil exhibiting spatially variable net nitrate production
- W. K. Ma, S. D. Siciliano and J. J. Germida 1589 A PCR-DGGE method for detecting arbuscular mycorrhizal fungi in cultivated soils
- A. Kohzu, T. Miyajima, T. Tateishi, T. Watanabe, M. Takahashi and E. Wada 1598 Dynamics of <sup>13</sup>C natural abundance in wood decomposing fungi and their ecophysiological implications
- P. M. Chamberlain, I. D. Bull, H. I. J. Black, P. Ineson and R. P. Evershed 1608 Fatty acid composition and change in Collembola fed differing diets: identification of trophic biomarkers
- J. C. Menneer, S. Ledgard, C. McLay and W. Silvester 1625 Animal treading stimulates denitrification in soil under pasture

- J. Mikola, M. Nieminen, K. Ilmarinen and M. Vestberg 1630 Belowground responses by AM fungi and animal trophic groups to repeated defoliation in an experimental grassland community
- Z. Ronen, S. Visnovsky and A. Nejdat 1640 Soil extracts and co-culture assist biodegradation of 2,4,6-tribromophenol in culture and soil by an auxotrophic *Achromobacter piechaudii* strain TBPZ
- R. Ji and A. Brune 1648 Digestion of peptidic residues in humic substances by an alkali-stable and humic-acid-tolerant proteolytic activity in the gut of soil-feeding termites
- S. R. Isaac and M. Achuthan Nair 1656 Biodegradation of leaf litter in the warm humid tropics of Kerala, India
- K. Dittert, C. Lampe, R. Gasche, K. Butterbach-Bahl, M. Wachendorf, H. Papen, B. Sattelmacher and F. Taube 1665 Short-term effects of single or combined application of mineral N fertilizer and cattle slurry on the fluxes of radiatively active trace gases from grassland soil
- B. K. Singh, A. Walker and D. J. Wright 1675 Cross-enhancement of accelerated biodegradation of organophosphorus compounds in soils: Dependence on structural similarity of compounds
- D. J. Burke, K. J. Martin, P. T. Rygielwicz and M. A. Topa 1683 Ectomycorrhizal fungi identification in single and pooled root samples: terminal restriction fragment length polymorphism (TRFLP) and morphotyping compared
- T. Sariyildiz, J. M. Anderson and M. Kucuk 1695 Effects of tree species and topography on soil chemistry, litter quality, and decomposition in Northeast Turkey
- L. Cole, S. M. Buckland and R. D. Bardgett 1707 Relating microarthropod community structure and diversity to soil fertility manipulations in temperate grassland
- M. Chahartaghi, R. Langel, S. Scheu and L. Ruess 1718 Feeding guilds in Collembola based on nitrogen stable isotope ratios
- W. R. Cookson, D. A. Abaye, P. Marschner, D. V. Murphy, E. A. Stockdale and K. W. T. Goulding 1726 The contribution of soil organic matter fractions to carbon and nitrogen mineralization and microbial community size and structure
- E. Benizri, S. Piutti, S. Verger, L. Pags, G. Vercambre, J. L. Poessel and P. Michelot 1738 Replant diseases: Bacterial community structure and diversity in peach rhizosphere as determined by metabolic and genetic fingerprinting
- A. Herrmann, V. B. Willett, E. A. Stockdale and D. L. Jones 1747 Interference by amino acids during the determination of  $^{15}\text{N}$  ammonium in soil

### Volume 37 Number 10

- T. A. Forge, S. Bittman and C. G. Kowalenko 1751 Responses of grassland soil nematodes and protozoa to multi-year and single-year applications of dairy manure slurry and fertilizer
- S. Georgieva, S. Christensen and K. Stevnbak 1763 Nematode succession and microfauna-microorganism interactions during root residue decomposition
- V. O. Biederbeck, R. P. Zentner and C. A. Campbell 1775 Soil microbial populations and activities as influenced by legume green fallow in a semiarid climate
- M. I. Khalil and E. M. Baggs 1785  $\text{CH}_4$  oxidation and  $\text{N}_2\text{O}$  emissions at varied soil water-filled pore spaces and headspace  $\text{CH}_4$  concentrations
- Y. Bashan and L. E. de-Bashan 1795 Fresh-weight measurements of roots provide inaccurate estimates of the effects of plant growth-promoting bacteria on root growth: a critical examination
- A. Sowerby, B. Emmett, C. Beier, A. Tietema, J. Peñuelas, M. Estiarte, M. J. M. Van Meeteren, S. Hughes and C. Freeman 1805 Microbial community changes in heathland soil communities along a geographical gradient: interaction with climate change manipulations
- N. Fenner, C. Freeman and B. Reynolds 1814 Observations of a seasonally shifting thermal optimum in peatland carbon-cycling processes; implications for the global carbon cycle and soil enzyme methodologies
- R. Well, H. Höper, O. Mehranfar and K. Meyer 1822 Denitrification in the saturated zone of hydromorphic soils—laboratory measurement, regulating factors and stochastic modeling
- I. Sonnemann, N. Streicher and V. Wolters 1837 Root associated organisms modify the effectiveness of chemically induced resistance in barley
- M. G. Vijver, J. P. M. Vink, T. Jager, H. Th. Wolterbeek, N. M. van Straalen and C. A. M. van Gestel 1843 Biphasic elimination and uptake kinetics of Zn and Cd in the earthworm *Lumbricus rubellus* exposed to contaminated floodplain soil



- P. Jouquet, L. Ranjard, M. Lepage and J. C. Lata 1852 Incidence of fungus-growing termites (Isoptera, Macrotermitinae) on the structure of soil microbial communities
- P. C. Selmants, S. C. Hart, S. I. Boyle and J. M. Stark 1860 Red alder (*Alnus rubra*) alters community-level soil microbial function in conifer forests of the Pacific Northwest, USA
- H. Ma and C. M. Aelion 1869 Ammonium production during microbial nitrate removal in soil microcosms from a developing marsh estuary
- X. Dai, T. W. Boutton, B. Glaser, R. J. Ansley and W. Zech 1879 Black carbon in a temperate mixed-grass savanna
- H. Schmitt, H. Haapakangas and P. van Beelen 1882 Effects of antibiotics on soil microorganisms: time and nutrients influence pollution-induced community tolerance
- K. Schmidtke 1893 How to calculate nitrogen rhizodeposition: a case study in estimating N rhizodeposition in the pea (*Pisum sativum* L.) and grasspea (*Lathyrus sativus* L.) using a continuous  $^{15}\text{N}$  labelling split-root technique
- I. Lobe, R. Bol, B. Ludwig, C. C. Du Preez and W. Amelung 1898 Savanna-derived organic matter remaining in arable soils of the South African Highveld long-term mixed cropping: Evidence from  $^{13}\text{C}$  and  $^{15}\text{N}$  natural abundance
- C. Roose-Amsaleg, P. Mora and M. Harry 1910 Physical, chemical and phosphatase activities characteristics in soil-feeding termite nests and tropical rainforest soils
- X. F. Sheng 1918 Growth promotion and increased potassium uptake of cotton and rape by a potassium releasing strain of *Bacillus edaphicus*
- X. M. Zou, H. H. Ruan, Y. Fu, X. D. Yang and L. Q. Sha 1923 Estimating soil labile organic carbon and potential turnover rates using a sequential fumigation-incubation procedure
- P.-Y. Cheung and B. K. Kinkle 1929 Changes in *Mycobacterium* spp. population structure and pyrene mineralization in polycyclic aromatic hydrocarbon-amended soils
- S. Stein, D. Selesi, R. Schilling, I. Pattis, M. Schmid and A. Hartmann 1938 Microbial activity and bacterial composition of  $\text{H}_2$ -treated soils with net  $\text{CO}_2$  fixation
- V. L. McKinley, A. D. Peacock and D. C. White 1946 Microbial community PLFA and PHB responses to ecosystem restoration in tallgrass prairie soils
- J. M. Xue, R. Sands, P. W. Clinton, T. W. Payn and M. F. Skinner 1959 Priming effect of biuret addition on native soil N mineralisation under laboratory conditions
- N. Fromin, S. Tarnawski, L. Roussel-Delif, J. Hamelin, E. M. Baggs and M. Aragno 1962 Nitrogen fertiliser rate affects the frequency of nitrate-dissimilating *Pseudomonas* spp. in the rhizosphere of *Lolium perenne* grown under elevated  $\text{pCO}_2$  (Swiss FACE)
- T. Kato, M. Hirota, Y. Tang, X. Cui, Y. Li, X. Zhao and T. Oikawa 1966 Strong temperature dependence and no moss photosynthesis in winter  $\text{CO}_2$  flux for a *Kobresia* meadow on the Qinghai-Tibetan plateau
- H. Chung, M. Park, M. Madhaiyan, S. Seshadri, J. Song, H. Cho and T. Sa 1970 Isolation and characterization of phosphate solubilizing bacteria from the rhizosphere of crop plants of Korea
- G. Seneviratne and H. S. Jayasinghearachchi 1975 A rhizobial biofilm with nitrogenase activity alters nutrient availability in a soil

### Volume 37 Number 11

- S. Fu, H. Ferris, D. Brown and R. Plant 1979 Does the positive feedback effect of nematodes on the biomass and activity of their bacteria prey vary with nematode species and population size?
- S. A. Quideau, R. C. Graham, S.-W. Oh, P. F. Hendrix and R. E. Wasylshen 1988 Leaf litter decomposition in a chaparral ecosystem, Southern California
- G. Wen, R. P. Voroney, D. Curtin, J. J. Schoenau, P. Y. Qian and S. Inanaga 1999 Modification and application of a soil ATP determination method
- R. K. Väisänen, M. S. Roberts, J. L. Garland, S. D. Frey and L. A. Dawson 2007 Physiological and molecular characterisation of microbial communities associated with different water-stable aggregate size classes
- Y. He, J. Xu, C. Tang and Y. Wu 2017 Facilitation of pentachlorophenol degradation in the rhizosphere of ryegrass (*Lolium perenne* L.)
- A. Zerva and M. Mencuccini 2025 Short-term effects of clearfelling on soil  $\text{CO}_2$ ,  $\text{CH}_4$ , and  $\text{N}_2\text{O}$  fluxes in a Sitka spruce plantation
- L. Meng, W. Ding and Z. Cai 2037 Long-term application of organic manure and nitrogen fertilizer on  $\text{N}_2\text{O}$  emissions, soil quality and crop production in a sandy loam soil

- L. Ström, A. G. Owen, D. L. Godbold and D. L. Jones 2046 Organic acid behaviour in a calcareous soil implications for rhizosphere nutrient cycling
- E. Benizri and B. Amiaud 2055 Relationship between plants and soil microbial communities in fertilized grasslands
- M. Schaefer, S. O. Petersen and J. Filse 2065 Effects of *Lumbricus terrestris*, *Allolobophora chlorotica* and *Eisenia fetida* on microbial community dynamics in oil-contaminated soil
- E. P. Brinkman, S. R. Troelstra and W. H. van der Putten 2077 Soil feedback effects to the foredune grass *Ammophila arenaria* by endoparasitic root-feeding nematodes and whole soil communities
- L. M. Stapleton, N. M. J. Crout, C. Sävström, W. A. Marshall, P. R. Poulton, A. M. Tye and J. Laybourn-Parry 2088 Microbial carbon dynamics in nitrogen amended Arctic tundra soil: Measurement and model testing
- R. Conrad and M. Klose 2099 Effect of potassium phosphate fertilization on production and emission of methane and its  $^{13}\text{C}$ -stable isotope composition in rice microcosms
- S. Zmora-Nahum, O. Markovitch, J. Tarchitzky and Y. Chen 2109 Dissolved organic carbon (DOC) as a parameter of compost maturity
- A. R. Taylor and V. Wolters 2117 Responses of oribatid mite communities to summer drought: The influence of litter type and quality
- A. H. M. Veeken, W. J. Blok, F. Curci, G. C. M. Coenen, A. J. Termorshuizen and H. V. M. Hamelers 2131 Improving quality of composted biowaste to enhance disease suppressiveness of compost-amended, peat-based potting mixes
- F. Azam, S. Gill and S. Farooq 2141 Availability of  $\text{CO}_2$  as a factor affecting the rate of nitrification in soil
- M. J. Briones, M. H. Garnett and T. G. Pearce 2145 Earthworm ecological groupings based on  $^{14}\text{C}$  analysis
- U. Jäkel, S. Russo and S. Schnell 2150 Enhanced iron reduction by iron supplement: A strategy to reduce methane emission from paddies
- B. L. Turner, N. Mahieu, L. M. Condron and C. R. Chen 2155 Quantification and bioavailability of *scyllo*-inositol hexakisphosphate in pasture soils
- S. D. Hafner and P. M. Groffman 2159 Soil nitrogen cycling under litter and coarse woody debris in a mixed forest in New York State
- O. Dilly, A. Gnaß and E.-M. Pfeiffer 2163 Humus accumulation and microbial activities in calcareous epigleyic fluvisols under grassland and forest diked in for 30 years
- 2167 Acknowledgement of Reviewer Contributions to Soil Biology & Biochemistry 2004

### Volume 37 Number 12

- A. Don and K. Kalbitz 2171 Amounts and degradability of dissolved organic carbon from foliar litter at different decomposition stages
- S. B. Durman, A. B. Menendez and A. M. Godeas 2180 Variation in oxalic acid production and mycelial compatibility within field populations of *Sclerotinia sclerotiorum*
- M. Niklińska, M. Chodak and R. Laskowski 2185 Characterization of the forest humus microbial community in a heavy metal polluted area
- A. E. Miller, J. P. Schimel, T. Meixner, J. O. Sickman and J. M. Melack 2195 Episodic rewetting enhances carbon and nitrogen release from chaparral soils
- T. M. Robson, V. A. Pancotto, A. L. Scopel, S. D. Flint and M. M. Caldwell 2205 Solar UV-B influences microfaunal community composition in a Tierra del Fuego peatland
- J. Eriksen 2216 Gross sulphur mineralisation-immobilisation turnover in soil amended with plant residues
- A. Johansen, I. M. B. Knudsen, S. J. Binnerup, A. Winding, J. E. Johansen, L. E. Jensen, K. S. Andersen, M. M. Svenning and T. A. Bonde 2225 Non-target effects of the microbial control agents *Pseudomonas fluorescens* DR54 and *Clonostachys rosea* IK726 in soils cropped with barley followed by sugar beet: a greenhouse assessment
- R. M. Rees and J. P. Parker 2240 Filtration increases the correlation between water extractable organic carbon and soil microbial activity
- K. L. Steenwerth, L. E. Jackson, F. J. Calderón, K. M. Scow and D. E. Rolston 2249 Response of microbial community composition and activity in agricultural and grassland soils after a simulated rainfall

L. W. Perelo and J. C. Munch	2263	Microbial immobilisation and turnover of $^{13}\text{C}$ labelled substrates in two arable soils under field and laboratory conditions
K. E. A. Ohlsson, B. Singh, S. Holm, A. Nordgren, L. Lövdahl and P. Högborg	2273	Uncertainties in static closed chamber measurements of the carbon isotopic ratio of soil-respired $\text{CO}_2$
K. M. Batten, J. Six, K. M. Scow and M. C. Rillig	2277	Plant invasion of native grassland on serpentine soils has no major effects upon selected physical and biological properties
S. Bruun, B. Stenberg, T. A. Breland, J. Gudmundsson, T. M. Henriksen, L. S. Jensen, A. Korsæth, J. Luxhøj, F. Palmason, A. Pedersen and T. Salo	2283	Empirical predictions of plant material C and N mineralization patterns from near infrared spectroscopy, stepwise chemical digestion and C/N ratios
W.-J. Choi and S. X. Chang	2297	Nitrogen dynamics in co-composted drilling wastes: Effects of compost quality and $^{15}\text{N}$ fertilization
K. A. Carline and R. D. Bardgett	2306	Changes in tree growth resulting from simulated browsing have limited effects on soil biological properties
C. Kurz-Besson, M.-M. Couëtaux, J. M. Thiéry, B. Berg and J. Remacle	2315	A comparison of litterbag and direct observation methods of Scots pine needle decomposition measurement
C. R. Jackson, S. L. Dugas and K. G. Harrison	2319	Enumeration and characterization of arsenate-resistant bacteria in arsenic free soils
J.-C. Clément, J. Shrestha, J. G. Ehrenfeld and P. R. Jaffé	2323	Ammonium oxidation coupled to dissimilatory reduction of iron under anaerobic conditions in wetland soils
M. Valé, C. Nguyen, E. Dambrine and J. L. Dupouey	2329	Microbial activity in the rhizosphere soil of six herbaceous species cultivated in a greenhouse is correlated with shoot biomass and root C concentrations
D. L. Johnson, D. R. Anderson and S. P. McGrath	2334	Soil microbial response during the phytoremediation of a PAH contaminated soil
J. He, Z. Xu and J. Hughes	2337	Pre-lysis washing improves DNA extraction from a forest soil

I Forthcoming Papers

III Volume Contents, Author and Keyword index (2004)